UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/854,084	05/10/2001	Tongwei Liu	10013649-1	7018

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EXAMINER
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ART UNIT	PAPER NUMBER
2121	

DATE MAILED: 05/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2004*.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☒ Claim(s) *9-24* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *3/12/04* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage

        application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☒ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. *7 or 8/with this p* .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

This action is responsive to application **09/854,084** filed **5/10/01** and the solicitation for

reconsideration filed 3/12/04.

Currently amended and original claims 1-24 filed by the applicant have been entered

and examined. As presented later in this Office Action, the currently amended and

original claims 1-24 are anticipated by prior art and further rejected for defining non-

statutory subject matter.

Drawings

The drawing replacement for Fig. 6 received 3/31/04 has been entered and approved.

Figs. 1-4, however, are objected to for arrowheads missing from the input and output of

devices.

Specification

Applicant(s) argue(s) that "the specification has been amended in a manner so as to

obviate the cited objections". The page 11, lines 4-9 paragraph and the page 23, lines

2-14 paragraph specification amendments filed by the applicant have been entered

justifying withdrawal of the laptop computer system and 100 objection to the

specification in the prior office action. However, it is noted that the item 143

objection/page 15, lines 2-8 amended paragraph is in conflict with the context of the

paragraph where a number of display technologies can be used to implement the

display device 141. An "on screen cursor device 143" would be an inappropriate display

technology for implementing display device 141. The Examiner suggests removing "on

screen cursor device 143".

The use of NETSCAPE™ has been noted in this application (specification page 17, line

19). Trademarks should be capitalized wherever they appear and be accompanied by

the generic terminology. Although the use of trademarks is permissible in patent

applications, the proprietary nature of the marks should be respected and every effort

made to prevent their use in any manner which might adversely affect their validity as

trademarks.

Claim Objections

Applicant(s) argue(s) that "The claims have been amended so as to eliminate any

informalities". Currently amended claims 1, 3-6, 8-14, 17 and 19-22 have been entered.

However, currently amended and original claims 9-24 are objected to because of the

following informalities:

Regarding currently amended claim 9, step d:

- 'comprising;' on amendment page 8, line 2, would read better as 'comprising:'

- 'said training set mapped to said best behavioral model' would read better as 'said

best behavioral model mapped to said training set'

Regarding currently amended claim 10:

Claim 10 is objected for being dependent on objected to independent claim 9.

Regarding currently amended claim 11:

Claim 10 is objected for being dependent on objected to independent claim 9.

Regarding currently amended claim 12:

Claim 10 is objected for being dependent on objected to independent claim 9.

Regarding currently amended claim 13:

Claim 10 is objected for being dependent on objected to independent claim 9.

Regarding currently amended claim 14:

Claim 10 is objected for being dependent on objected to independent claim 9.

Regarding original claim 15:

Claim 10 is objected for being dependent on objected to independent claim 9.

Regarding original claim 16:

Claim 10 is objected for being dependent on objected to independent claim 9.

Regarding currently amended claim 17, step d:

- 'perform;' on amendment page 10, claim line 3, would read better as 'perform:'

- Step d occurs twice.

- The first occurrence would read better if 'said training set mapped to said best behavioral model' was replaced with 'said best behavioral model mapped to said training set'.

- The second occurrence of step d should be labeled step e.

Regarding original claim 18:

Claim 18 is objected for being dependent on objected to independent claim 17.

Regarding currently amended claim 19:

Claim 19 is objected for being dependent on objected to independent claim 17.

Regarding currently amended claim 20:

Claim 20 is objected for being dependent on objected to independent claim 17.

Regarding currently amended claim 21:

Claim 21 is objected for being dependent on objected to independent claim 17.

Regarding currently amended claim 22:

Claim 22 is objected for being dependent on objected to independent claim 17.

Regarding original claim 23:

Claim 23 is objected for being dependent on objected to independent claim 17.

Regarding original claim 24:

Claim 24 is objected for being dependent on objected to independent claim 17.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claim 1 is rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The language of the claims (e.g. "training set", "database", "attributes", "behavioral model", "business metric space", "strategy") raise a question as to whether the claims are directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical

application producing a concrete, useful, and tangible result to form the basis of

statutory subject matter under 35 U.S.C. 101. For example, if claim 1 was amended to

recite a computer-implemented method, it will be statutory in most cases since use of

technology permits the function of the descriptive material to be realized.

Claim Rejections - 35 USC § 102

Applicant(s) argue(s) that "Becker et al. does not anticipate or render obvious a method

for determining an action selection that is based upon an outcome relative to a subject

that includes "c) calculating and storing a best behavioral model for predicting said

outcome, provided an action is applied to said subject" and determining and storing an

optimized strategy for a random sub-sample where the optimized strategy is for

"providing an optimal action relative to said subject for said objective of said outcome"

as is recited in Claim 1" (REMARKS page 14, last paragraph – page 15, line 1),

"Nowhere in the Becker et al. reference is there taught or suggested a method, system,

or program for "c) calculating and storing a best behavioral model for predicting said

outcome, provided an action is applied to said subject" and determining and storing an

optimized strategy for a random sub-0sample where the optimized strategy is for

"providing an optimal action relative to said subject for said objective of said outcome"

as is recited in Claim 1 (and similar limitations of Claims 9, and 17)" (REMARKS page

15, lines 5-11) and "It should be appreciated that these limitations represent specifically

defined steps that are simply not taught or suggested (or even addressed) in the Becker

et al. reference" (REMARKS page 15, lines 11-13) for traversing the 35 U.S.C. 102(b)

rejection of claims 1, 9 and 17 in light of *Becker et al* USPN 5,930,803 (July 27, 1999).

The 35 U.S.C. 102(b) rejections of claims 1-24 in light of *Becker et al* are withdrawn.

Claim Rejections - 35 USC § 103

To expedite this application, a complete examination appears below, despite the

presence of the rejection under 35 U.S.C. 101.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the

claims under 35 U.S.C. 103(a), the Office presumes that the subject matter of the

various claims was commonly owned at the time any inventions covered therein were

made absent any evidence to the contrary. Applicant is advised of the obligation under

37 CFR 1.56 to point out the inventor and invention dates of each claim that was not

commonly owned at the time a later invention was made in order for the Office to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g)

prior art under 35 U.S.C. 103(a).

Original and currently amended claims 1-5, 7-13, 15-21 and 23-24 are rejected

under 35 U.S.C. 103(a) in light of *Becker et al* USPN 5,930,803 (July 27, 1999) in view

of *Galperin et al* USPN 6,185,543 (February 6, 2001).

Regarding claim 1:

Becker et al teaches,

- a) acquiring and storing a training set, said training set an existent database of

information, wherein said information are attributes of said subject, wherein said training

set is to provide a base of data for said method (FIGS. 4-11C; column 1, lines 46-48,

"Inducers require...the class label"; column 23, lines 9-14, "Computer programs...as

discussed herein")

- b) calculating and storing a best behavioral model for predicting said outcome,

provided an action is applied to said subject (column 1, lines 31-32, "the classifier

predicts...more other attributes"; column 9, lines 37-56, "For this example iris

database...respective pie slice"; Fig. 13, item 1302, 1360, 1370, 1380, 1338; Fig. 16,

items 1608, 1610, 1618, 1622)

- c) mapping of said training set to said best behavioral model, wherein said mapping is

subsequently stored (column 3, lines 12-14, "the evidence inducer...the evidence

classifier"; column 9, lines 37-56, "For this example iris database...respective pie slice")

- d) selecting and storing a random sub-sample of said training set mapped to said best

behavioral model, said random sub-sample for reducing computational requirements

when determining an optimized strategy (column 20, lines 60-65, "a random portion...an

accuracy estimate")

- e) determining and storing said optimized strategy for said random sub-sample, said

optimized strategy for providing an optimal action relative to said subject for said

objective of said outcome (column 7, lines 29-48, "Evidence classifier" and ...the

attribute value")

However, *Becker et al* doesn't explicitly teach a business metric space while *Galperin et*

al teaches,

- c) mapping of said training set to said best behavioral model within a business metric

space, wherein said mapping is subsequently stored (column 3, lines 35-37, "By

assisting lenders...the lending economy")

Motivation – The portions of the claimed method would have been a highly desirable

feature in this art for

- Filtering low count attribute values (*Becker et al*, column 4, lines 62-67, "a count

    slider...the count slider")

- Improving business processes (*Galperin et al*, column 3, lines 29-35, "The

    advanced scoring...as automobile loans")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made, to combine *Becker et al* with *Galperin et al* to obtain the method for

action selection specified in currently amended claim 1. The modification would have

been obvious because one of ordinary skill in the art would have been motivated to

easily and accurately optimize the prediction of attributes relevant to business

processes.

Regarding claim 2:

The rejection of claim 1 is incorporated. Claim 2's further limitations are taught in

Becker et al:

- a web based environment (FIG. 13; column 22, lines 50-52, "communications

interface... as the Internet")

Galperin et al:

- said subject is a customer of a business entity, said business entity enabled to interact

with said customer in a web based environment, and wherein said action is a promotion

offered by said business entity (Fig. 2; column 2, lines 10-19, "a beneficial use... of debt

financing")

Therefore, claim 2 is rejected under the same rationale as claim 1.

Regarding claim 3:

The rejection of claim 1 is incorporated. Claim 3's further limitations are taught in

Becker et al:

- allocating a dimensional attribute vector relative to each subject referenced in said

training set (column 18, lines 11-23, "FIG. 13 further illustrates... evidence classifier

visualization")

Therefore, claim 3 is rejected under the same rationale as claim 1.

Regarding claim 4:

The rejection of claim 1 is incorporated. Claim 4's further limitations are taught in

Becker et al:

- deriving a function from said action being applied to said subject, wherein said function

equates to said best behavioral model and said function is represented as a

dimensional vector (column 7, lines 9-19, "A first label... selected attribute value")

Therefore, claim 4 is rejected under the same rationale as claim 1.

Regarding claim 5:

The rejection of claim 1 is incorporated. Claim 5's further limitations are taught in

Galperin et al:

- said subject of said training set said mapped is a separate point in said business

metric space (FIG. 5)

Therefore, claim 5 is rejected under the same rationale as claim 1.

Regarding claim 7:

The rejection of claim 1 is incorporated. Claim 7's further limitations are taught in

Becker et al:

- said optimized strategy provides a logical division for classification of said subject, so

as to determine said optimal action of said objective of an outcome, relative to said

subject (column 4, lines 54-57, "the evidence inducer... different as possible")

Therefore, claim 7 is rejected under the same rationale as claim 1.

Regarding claim 8:

The rejection of claim 1 is incorporated. Claim 8's further limitations are taught in

Becker et al:

- a new subject that is not from said training set, is mapped to said best behavioral

model and said stored optimized strategy, such that said new subject is included in said

classification of said logical division, so as to provide an optimal action for said objective

of said outcome, relative to said new subject (column 19, lines 1-26, "Current columns

window...: data transformation panel")

Therefore, claim 8 is rejected under the same rationale as claim 1.

Regarding claim 9:

Becker et al teaches,

- a bus (Fig. 16, item 1602)

- a memory unit coupled to said bus (Fig. 16, items 1608, 1610, 1612, 1614, 1618,

1622)

- at least one processor coupled to said bus, said at least one processor for executing a

method for action selection based upon an objective of an outcome relative to a subject

(Fig. 16, item 1604)

- a) acquiring and storing a training set, said training set an existing database of

information, said information are attributes of said subject, wherein said training set is to

provide a base of data for said method (FIGS. 4-11C; column 1, lines 46-48, "Inducers

require...the class label"; column 23, lines 9-14, "Computer programs...as discussed

herein")

- b) calculating and storing a best behavioral model for predicting said outcome,

provided an action is applied to said subject (column 1, lines 31-32, "the classifier

predicts...more other attributes"; column 9, lines 37-56, "For this example iris

database...respective pie slice"; Fig. 13, item 1302, 1360, 1370, 1380, 1338; Fig. 16,

items 1608, 1610, 1618, 1622)

- c) mapping of said training set to said best behavioral model, wherein said mapping is subsequently stored (column 3, lines 12-14, "the evidence inducer...the evidence classifier"; column 9, lines 37-56, "For this example iris database...respective pie slice")

- d) selecting and storing a random sub-sample of said training set mapped to said best behavioral model, said random sub-sample for reducing computational requirements when determining an optimized strategy (column 20, lines 60-65, "a random portion...an accuracy estimate")

- e) determining and storing said optimized strategy for said random sub-sample, said optimized strategy for providing an optimal action relative to said subject for said objective of said outcome (column 7, lines 29-48, "Evidence classifier" and ...the attribute value")

However, *Becker et al* doesn't explicitly teach a business metric space while *Galperin et al* teaches,

- c) mapping of said training set to said best behavioral model within a business metric space, wherein said mapping is subsequently stored (column 3, lines 35-37, "By assisting lenders...the lending economy")

Motivation – The portions of the claimed system would have been a highly desirable feature in this art for

- Filtering low count attribute values (*Becker et al*, column 4, lines 62-67, "a count slider...the count slider")

- Improving business processes (*Galperin et al*, column 3, lines 29-35, "The advanced scoring...as automobile loans")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to combine *Becker et al* with *Galperin et al* to obtain the computer system in a computer network of currently amended claim 9. The modification would have been obvious because one of ordinary skill in the art would have been motivated to easily and accurately optimize the prediction of attributes relevant to business processes.

Regarding claim 10:

The rejection of claim 9 is incorporated. Claim 10's further limitations are taught in *Becker et al*:

- a web based environment (FIG. 13; column 22, lines 50-52, "communications interface... as the Internet")

Galperin et al:

- said subject is a customer of a business entity, said business entity being enabled to interact with said customer in a web based environment, and wherein said action is a promotion offered by said business entity (Fig. 2; column 2, lines 10-19, "a beneficial use... of debt financing")

Therefore, claim 10 is rejected under the same rationale as claim 9.

Regarding claim 11:

The rejection of claim 9 is incorporated. Claim 11's further limitations are taught in *Becker et al*:

- allocating a dimensional attribute vector relative to each subject referenced in said

database (column 18, lines 11-23, "FIG. 13 further illustrates...evidence classifier

visualization")

Therefore, claim 11 is rejected under the same rationale as claim 9.

Regarding claim 12:

The rejection of claim 9 is incorporated. Claim 12's further limitations are taught in

Becker et al:

- deriving a function from said action being applied to said subject, wherein said function

equates to said best behavioral model and wherein said function is represented as a

dimensional vector (column 7, lines 9-19, "A first label...selected attribute value")

Therefore, claim 12 is rejected under the same rationale as claim 9.

Regarding claim 13:

The rejection of claim 9 is incorporated. Claim 13's further limitations are taught in

Galperin et al:

- said subject of said mapped training set is a separate point in said business metric

space (FIG. 5)

Therefore, claim 13 is rejected under the same rationale as claim 9.

Regarding claim 15:

The rejection of claim 9 is incorporated. Claim 15's further limitations are taught in

Becker et al:

- said optimized strategy provides a logical division for classification of said subject, so as to determine said optimal action of said objective of said outcome, relative to said subject (column 4, lines 54-57, "the evidence inducer...different as possible")

Therefore, claim 15 is rejected under the same rationale as claim 9.

Regarding claim 16:

The rejection of claim 9 is incorporated. Claim 16's further limitations are taught in *Becker et al*:

- a new subject, said new subject not from said training set, is mapped to said best behavioral model and said optimized strategy, such that said new subject is included in said classification of said logical divisions, so as to provide an optimal action for said objective of said outcome, relative to said new subject (column 19, lines 1-26, "Current columns window...data transformation panel")

Therefore, claim 16 is rejected under the same rationale as claim 9.

Regarding claim 17:

Becker et al teaches,

- a) acquiring and storing a training set, said training set an existent database of information, said information are attributes of said subject, wherein said training set is to provide a base of data for said method (FIGS. 4-11C; column 1, lines 46-48, "Inducers require...the class label"; column 23, lines 9-14, "Computer programs...as discussed herein")

- b) calculating and storing a best behavioral model for predicting said outcome, provided an action is applied to said subject (column 1, lines 31-32, "the classifier

predicts...more other attributes"; column 9, lines 37-56, "For this example iris

database...respective pie slice"; Fig. 13, item 1302, 1360, 1370, 1380, 1338; Fig. 16,

items 1608, 1610, 1618, 1622)

- c) mapping of said training set to said best behavioral model, wherein said mapping is

subsequently stored (column 3, lines 12-14, "the evidence inducer...the evidence

classifier"; column 9, lines 37-56, "For this example iris database...respective pie slice")

- d) selecting and storing a random sub-sample of said training set mapped to said best

behavioral model, said random sub-sample utilized for reducing computational

requirements when determining an optimized strategy (column 20, lines 60-65, "a

random portion...an accuracy estimate")

- d) determining and storing said optimized strategy for said random sub-sample, said

optimized strategy for providing an optimal action relative to said subject for said

objective of said outcome (column 7, lines 29-48, "Evidence classifier" and ...the

attribute value")

However, *Becker et al* doesn't explicitly teach a business metric space while *Galperin et*

al teaches,

- c) mapping of said training set to said best behavioral model within a business metric

space, wherein said mapping is subsequently stored (column 3, lines 35-37, "By

assisting lenders...the lending economy")

Motivation – The portions of the claimed computer readable medium would have been a

highly desirable feature in this art for

- Filtering low count attribute values (*Becker et al*, column 4, lines 62-67, "a count slider...the count slider")

- Improving business processes (*Galperin et al*, column 3, lines 29-35, "The advanced scoring...as automobile loans")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to combine *Becker et al* with *Galperin et al* to obtain the computer readable medium for storing computer implemented instructions in currently amended claim 17. The modification would have been obvious because one of ordinary skill in the art would have been motivated to easily and accurately optimize the prediction of attributes relevant to business processes.

Regarding claim 18:

The rejection of claim 17 is incorporated. Claim 18's further limitations are taught in *Becker et al*:

- a web based environment (FIG. 13; column 22, lines 50-52, "communications interface...as the Internet")

Galperin et al:

- said subject is a customer of a business entity, said business entity enabled to interact with said customer in a web based environment, and wherein said action is a promotion offered by said business entity (Fig. 2; column 2, lines 10-19, "a beneficial use...of debt financing")

Therefore, claim 18 is rejected under the same rationale as claim 17.

Regarding claim 19:

The rejection of claim 17 is incorporated. Claim 19's further limitations are taught in *Becker et al*:

- allocating a dimensional attribute vector relative to each subject referenced in said training set (column 18, lines 11-23, "FIG. 13 further illustrates...evidence classifier visualization")

Therefore, claim 19 is rejected under the same rationale as claim 17.

Regarding claim 20:

The rejection of claim 17 is incorporated. Claim 20's further limitations are taught in *Becker et al*:

- deriving a function from said action being applied to said subject, wherein said function equates to said best behavioral model, and wherein said function is represented as a dimensional vector (column 7, lines 9-19, "A first label...selected attribute value")

Therefore, claim 20 is rejected under the same rationale as claim 17.

Regarding claim 21:

The rejection of claim 17 is incorporated. Claim 21's further limitations are taught in *Galperin et al*:

- said subject of said mapped training set is a separate point within said business metric space (FIG. 5)

Therefore, claim 21 is rejected under the same rationale as claim 17.

Regarding claim 23:

The rejection of claim 17 is incorporated. Claim 23's further limitations are taught in

Becker et al:

- said optimized strategy provides a logical division for classification of said subject, so

as to determine said optimal action of said objective of said outcome, relative to said

subject (column 4, lines 54-57, "the evidence inducer...different as possible")

Therefore, claim 23 is rejected under the same rationale as claim 17.

Regarding claim 24:

The rejection of claim 17 is incorporated. Claim 24's further limitations are taught in

Becker et al:

- a new subject, said new subject not from said training set, is mapped to said best

behavioral model and said optimized strategy, such that said new subject is included in

said classification of said logical division, so as to provide an optimal action for said

objective of said outcome, relative to said new subject (column 19, lines 1-26, "Current

columns window...data transformation panel")

Therefore, claim 24 is rejected under the same rationale as claim 17.

Original and currently amended claims 6, 14 and 22 are rejected under 35 U.S.C.

103(a) in light of *Becker et al* USPN 5,930,803 (July 27, 1999) in view of *Galperin et al*

USPN 6,185,543 (February 6, 2001) in further view of *Georgilakis et al* "A Neural

Network Framework for Predicting Transformer Core Losses" (July 1999) and further in

view of *Mangasarian* "Breast Cancer Diagnosis via Linear Programming" (Fall 1995).

Regarding claim 6:

Becker et al teaches,

- a) acquiring and storing a training set, said training set an existent database of

information, wherein said information are attributes of said subject, wherein said training

set is to provide a base of data for said method (FIGS. 4-11C; column 1, lines 46-48,

"Inducers require...the class label"; column 23, lines 9-14, "Computer programs...as

discussed herein")

- b) calculating and storing a best behavioral model for predicting said outcome,

provided an action is applied to said subject (column 1, lines 31-32, "the classifier

predicts...more other attributes"; column 9, lines 37-56, "For this example iris

database...respective pie slice"; Fig. 13, item 1302, 1360, 1370, 1380, 1338; Fig. 16,

items 1608, 1610, 1618, 1622)

- c) mapping of said training set to said best behavioral model, wherein said mapping is

subsequently stored (column 3, lines 12-14, "the evidence inducer...the evidence

classifier"; column 9, lines 37-56, "For this example iris database...respective pie slice")

- d) selecting and storing a random sub-sample of said training set mapped to said best

behavioral model, said random sub-sample for reducing computational requirements

when determining an optimized strategy (column 20, lines 60-65, "a random portion...an

accuracy estimate")

- e) determining and storing said optimized strategy for said random sub-sample, said

optimized strategy for providing an optimal action relative to said subject for said

objective of said outcome (column 7, lines 29-48, "Evidence classifier" and ...the

attribute value")

However, *Becker et al* doesn't explicitly teach a business metric space or linear

programming while *Galperin et al* teaches,

- c) mapping of said training set to said best behavioral model within a business metric

space, wherein said mapping is subsequently stored (column 3, lines 35-37, "By

assisting lenders...the lending economy")

Georgilakis et al teaches,

- utilizing linear programming to calculate said optimal action, wherein said optimal

action is associated with the largest number of subjects (page 304, paragraphs 5-6, "It

can be...satisfies the constraints")

Mangasarian teaches,

- utilizing linear programming to calculate said optimal action, wherein said optimal

action is associated with the largest number of subjects (page 70, paragraph 1,

sentence 1, "Linear programming, used...combinations of variables")

Motivation – The portions of the claimed method would have been a highly desirable

feature in this art for

- Filtering low count attribute values (*Becker et al*, column 4, lines 62-67, "a count
  slider...the count slider")

- Improving business processes (*Galperin et al*, column 3, lines 29-35, "The
  advanced scoring...as automobile loans")

- Increasing prediction accuracy (*Georgilakis et al*, Abstract, "In this paper...the current practice")

- Easy programming (*Mangasarian*, page 71, paragraph 1, "a linear programming...more than adequate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to combine *Becker et al* with *Galperin et al, Georgilakis et al* and *Mangasarian* to obtain the method for action selection specified in currently amended claim 6. The modification would have been obvious because one of ordinary skill in the art would have been motivated to easily and accurately optimize the prediction of attributes relevant to business processes.

Regarding claim 14:

Becker et al teaches,

- a bus (Fig. 16, item 1602)

- a memory unit coupled to said bus (Fig. 16, items 1608, 1610, 1612, 1614, 1618, 1622)

- at least one processor coupled to said bus, said at least one processor for executing a method for action selection based upon an objective of an outcome relative to a subject (Fig. 16, item 1604)

- a) acquiring and storing a training set, said training set an existing database of information, said information are attributes of said subject, wherein said training set is to provide a base of data for said method (FIGS. 4-11C; column 1, lines 46-48, "Inducers

require...the class label"; column 23, lines 9-14, "Computer programs...as discussed herein")

- b) calculating and storing a best behavioral model for predicting said outcome, provided an action is applied to said subject (column 1, lines 31-32, "the classifier predicts...more other attributes"; column 9, lines 37-56, "For this example iris database...respective pie slice"; Fig. 13, item 1302, 1360, 1370, 1380, 1338; Fig. 16, items 1608, 1610, 1618, 1622)

- c) mapping of said training set to said best behavioral model, wherein said mapping is subsequently stored (column 3, lines 12-14, "the evidence inducer...the evidence classifier"; column 9, lines 37-56, "For this example iris database...respective pie slice")

- d) selecting and storing a random sub-sample of said training set mapped to said best behavioral model, said random sub-sample for reducing computational requirements when determining an optimized strategy (column 20, lines 60-65, "a random portion...an accuracy estimate")

- e) determining and storing said optimized strategy for said random sub-sample, said optimized strategy for providing an optimal action relative to said subject for said objective of said outcome (column 7, lines 29-48, "Evidence classifier" and ...the attribute value")

However, *Becker et al* doesn't explicitly teach a business metric space or linear programming while *Galperin et al* teaches,

- c) mapping of said training set to said best behavioral model within a business metric

space, wherein said mapping is subsequently stored (column 3, lines 35-37, "By

assisting lenders... the lending economy")

Georgilakis et al teaches,

- utilizing linear programming to calculate said optimal action, wherein said optimal

action is associated with the largest number of subjects (page 304, paragraphs 5-6, "It

can be... satisfies the constraints")

Mangasarian teaches,

- utilizing linear programming to calculate said optimal action, wherein said optimal

action is associated with the largest number of subjects (page 70, paragraph 1,

sentence 1, "Linear programming, used... combinations of variables")

<u>Motivation</u> – The portions of the claimed system would have been a highly desirable

feature in this art for

- Filtering low count attribute values (*Becker et al*, column 4, lines 62-67, "a count

  slider... the count slider")

- Improving business processes (*Galperin et al*, column 3, lines 29-35, "The

  advanced scoring... as automobile loans")

- Increasing prediction accuracy (*Georgilakis et al*, Abstract, "In this paper... the

  current practice")

- Easy programming (*Mangasarian*, page 71, paragraph 1, "a linear

  programming... more than adequate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made, to combine *Becker et al* with *Galperin et al, Georgilakis et al* and

Mangasarian to obtain the computer system in a computer network of currently

amended claim 14. The modification would have been obvious because one of ordinary

skill in the art would have been motivated to easily and accurately optimize the

prediction of attributes relevant to business processes.

Regarding claim 22:

Becker et al teaches,

- a) acquiring and storing a training set, said training set an existent database of

information, said information are attributes of said subject, wherein said training set is to

provide a base of data for said method (FIGS. 4-11C; column 1, lines 46-48, "Inducers

require...the class label"; column 23, lines 9-14, "Computer programs...as discussed

herein")

- b) calculating and storing a best behavioral model for predicting said outcome,

provided an action is applied to said subject (column 1, lines 31-32, "the classifier

predicts...more other attributes"; column 9, lines 37-56, "For this example iris

database...respective pie slice"; Fig. 13, item 1302, 1360, 1370, 1380, 1338; Fig. 16,

items 1608, 1610, 1618, 1622)

- c) mapping of said training set to said best behavioral model, wherein said mapping is

subsequently stored (column 3, lines 12-14, "the evidence inducer...the evidence

classifier"; column 9, lines 37-56, "For this example iris database...respective pie slice")

- d) selecting and storing a random sub-sample of said training set mapped to said best

behavioral model, said random sub-sample utilized for reducing computational

requirements when determining an optimized strategy (column 20, lines 60-65, "a

random portion...an accuracy estimate")

- d) determining and storing said optimized strategy for said random sub-sample, said

optimized strategy for providing an optimal action relative to said subject for said

objective of said outcome (column 7, lines 29-48, "Evidence classifier" and ...the

attribute value")

However, *Becker et al* doesn't explicitly teach a business metric space or linear

programming while *Galperin et al* teaches,

- c) mapping of said training set to said best behavioral model within a business metric

space, wherein said mapping is subsequently stored (column 3, lines 35-37, "By

assisting lenders...the lending economy")

Georgilakis et al teaches,

- utilizing linear programming to calculate said optimal action, wherein said optimal

action is associated with the largest number of subjects (page 304, paragraphs 5-6, "It

can be...satisfies the constraints")

Mangasarian teaches,

- utilizing linear programming to calculate said optimal action, wherein said optimal

action is associated with the largest number of subjects (page 70, paragraph 1,

sentence 1, "Linear programming, used...combinations of variables")

<u>Motivation</u> – The portions of the claimed computer readable medium would have been a highly desirable feature in this art for

- Filtering low count attribute values (*Becker et al*, column 4, lines 62-67, "a count slider...the count slider")

- Improving business processes (*Galperin et al*, column 3, lines 29-35, "The advanced scoring...as automobile loans")

- Increasing prediction accuracy (*Georgilakis et al*, Abstract, "In this paper...the current practice")

- Easy programming (*Mangasarian*, page 71, paragraph 1, "a linear programming...more than adequate")

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to combine *Becker et al* with *Galperin et al, Georgilakis et al* and *Mangasarian* to obtain the computer readable medium for storing computer implemented instructions in currently amended claim 22. The modification would have been obvious because one of ordinary skill in the art would have been motivated to easily and accurately optimize the prediction of attributes relevant to business processes.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- *Becker et al*; US 5930803; Method, system, and computer program product for

visualizing an evidence classifier

- *Galperin et al*; US 6185543 B1; Method and apparatus for determining loan

prepayment scores

- *Georgilakis et al*; "A neural network framework for predicting transformer core losses";

Proceedings of the 21st 1999 IEEE International Power Industry Computer Applications;

Jul 1999; pp 301-308

- *Mangasarian*; "Breast Cancer Diagnosis via Linear Programming"; Computational

Science and Engineering, IEEE [see also Computing in Science & Engineering]; Vol. 2 ,

Iss. 3; Fall 1995;

- *Chaudhuri et al*; US 6278989 B1; Histogram construction using adaptive random

sampling with cross-validation for database systems

- *Takahashi et al*; US 5452400 A; Method of optimizing a combination using a neural

network

- *Hoskins et al*; US 5377307 A; System and method of global optimization using artificial

neural networks

- *Bowman-Amuah*; US 6345239 B1; Remote demonstration of business capabilities in

an e-commerce environment

- *Mangasarian*; Multisurface method of pattern separation; Information Theory, IEEE

Transactions on; Vol. 14, Iss. 6; Nov 1968; pp 801 - 807

- *Chalom et al*; "Segmentation of an image sequence using multi-dimensional image attributes"; 1996. Proceedings International Conference on Image Processing; 16-19 Sep 1996; pp 525-528 vol.2

- *Bradley et al*; Parsimonious side propagation; Acoustics, Speech, and Signal Processing, Proceedings of the 1998 IEEE International Conference on;,Vol. 3, 12-15 May 1998; pp 1873-1876

- *Mangasarian et al*; Successive overrelaxation for support vector machines; Neural Networks, IEEE Transactions on; Vol. 10, Iss. 5; Sept. 1999; pp 1032-1037

Any inquiry concerning this communication or earlier communications from the Office should be directed to Meltin Bell whose telephone number is 703-305-0362. This Examiner can normally be reached on Mon - Fri 7:30 am - 4:30 pm.

If attempts to reach this Examiner by telephone are unsuccessful, his supervisor, Anil Khatri, can be reached on 703-305-0282. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.

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